**Title: The Only Game in Town**

**Brief Overview:**

> Using the 1998 World Cup as a common thread, students will learn how mathematics is involved in sports through varied activities involving statistics, scale drawing, measurement, computation, and a writing activity.

**Links to NCTM Standards:**

- **Mathematics as Problem Solving**
  Students will demonstrate their ability to solve mathematical problems relating to their particular task.

- **Mathematics as Communication**
  Students will demonstrate their ability to communicate mathematically by writing an article for their school newspaper.

- **Mathematics as Reasoning**
  Students will demonstrate their ability to reason mathematically by making comparisons based upon discussions, observations and calculations.

- **Mathematical Connections**
  Students will develop a global perspective through studying participation in the World Cup and making statistical comparisons.

- **Number and Number Relationships**
  Students will demonstrate mathematical strategies to solve various problems and analyze appropriateness of solutions such as: proportions, scale models, outcomes.

- **Computation and Estimation**
  Students will determine areas of 2-D and 3-D shapes and will calculate team scores.

- **Patterns and Functions**
  Students will identify geometric patterns found in national flags.

- **Statistics**
  Students will demonstrate their ability to collect, organize, and display data in frequency distributions charts. Students will demonstrate ability to compare two sets of graph data.

- **Geometry**
  Students will demonstrate their understanding of geometric relationships by manipulating spheres.

- **Measurement**
  Students will demonstrate their ability to determine standard measurements of various geometric figures and calculate their areas. Students will demonstrate their ability to convert standard units of measure.

**Grade/Level:**

> Grades 6-8

**Duration/Length:**

This learning unit is designed for four class periods with the writing component being either a fifth day or a homework assignment. Each of the four units may stand independently and, except for Data Sheet 1, information from one activity is not required for another.

**Prerequisite Knowledge:**

Students should have working knowledge of the following skills (for example):

• Ratio and proportion in relation to scale drawings
• Frequency tally charts
• Bar graphs
• Measuring in standard units
• Standard measurement conversions
• Geometric patterns
• Evaluation of formulas
• Research methods using reference materials
• Reading data from charts
• Proportions and percent error
• Vocabulary:   radius, radii, circle, diameter, circumference, sphere, frequency distribution, tally, percentage, polygons

**Objectives:**

Students will:

• work in cooperative groups.
• make a scale model.
• make accurate calculations using appropriate units of measure.
• make comparisons and draw conclusions using mathematical data.
• determine geometric patterns.
• write an article incorporating information from units presented.
• complete frequency tally charts, use proportions to make predictions, calculate . percent error, and graph results.

**Materials/Resources/Printed Materials:**

• Data Sheets 1, 2, 3
• Activity Sheets 1-5
• Construction Paper
• Crayons, chalk
• Soccer ball(s), small ball (such as tennis ball, nerf ball)
• Yard stick
• String
• Regular calculator
• Ruler with standard measures
• Reference materials:  atlas, almanac, encyclopedia
• Calculator
• Optional:  TI 83 graphing calculator; computer with reference software and/or Internet capabilities

**Development/Procedures:**

**Day 1:**

- The teacher will introduce the unit by leading a discussion on soccer and its popularity world-wide. How is mathematics involved in this activity? Soccer balls will be available to inspect and there should be a discussion as to the geometric figures in the construction of the ball. Distribute one small ball to each group.
- The teacher should review measuring objects and evaluating formulas. Activity 1 worksheets will be distributed and students will work cooperatively.

**Day 2:**

- The teacher will distribute activity 2 worksheets 1 & 2 to complete. Upon completion of the activity, the students will discuss which teams will go to the second round.
- Discussing the second round will provide the opportunity for students to solve Activity 2 Worksheet 3.

**Day 3:**

- Start with a discussion of what symbols represent each team. Lead the discussion into the flags of the countries. Explain that in order for a flag to be official, each country determines the ratio of flag height to length. Students will use this information during the activity.
- Distribute the worksheet. Students may work in groups for the first part of the activity. For the second and third parts, students must complete the work individually.

**Day 4:**

- The teacher will introduce this lesson by emphasizing that soccer is the most popular sport worldwide. Data Sheet #1 giving the list of thirty-two participating countries will be distributed. Using atlases, students will categorize the countries by continent, writing the appropriate names under the correct designations. They will then tally the total countries representing each continent on Worksheet #1 for Activity 4.
- Next, the teacher gives the total goals scored for a particular continent to the class (or gives one different continent goal total to each group). Students then use proportions to calculate the predicted goal scored for the remaining four continents. This prediction is then plotted on the double bar graph provided on Worksheet #2, Activity 4.
- Data Sheet #2, containing each country's individual player's goals scored totals, is now distributed. Students will use the player's country to categorize and tally the actual goals scored for each continent designation. These totals are then plotted on the double bar graph on Worksheet #2, Activity 4.
- Worksheet #3, Activity 4 is now distributed. Students transfer the actual goals scored and the predicted goals scored to the appropriate spaces. Then students calculate the percent error of their predictions following the worksheet template.
- Students then write an explanatory paragraph to explain the double bar graph data and the error difference that occurred between the predicted and actual goals scored.

**Day 5:**

- Writing activity. This may be done either as class work or as a homework assignment.

**Performance Assessment:**

Each of the four activities and the writing activity have a rubric for assessment purposes. These should be provided to the students at the beginning of each activity.

**Extension/Follow Up:**

Students can research soccer in their community by contacting the local recreation department. Information they can find includes the number and ages of players, and number of teams compared to other sports.

Students interested in other sports can rewrite any of the four activities and relate it to their sport.

Students can compare soccer outcomes with basketball. They can pick the top scoring basketball teams and determine which team plays each other and decide second round matchings.

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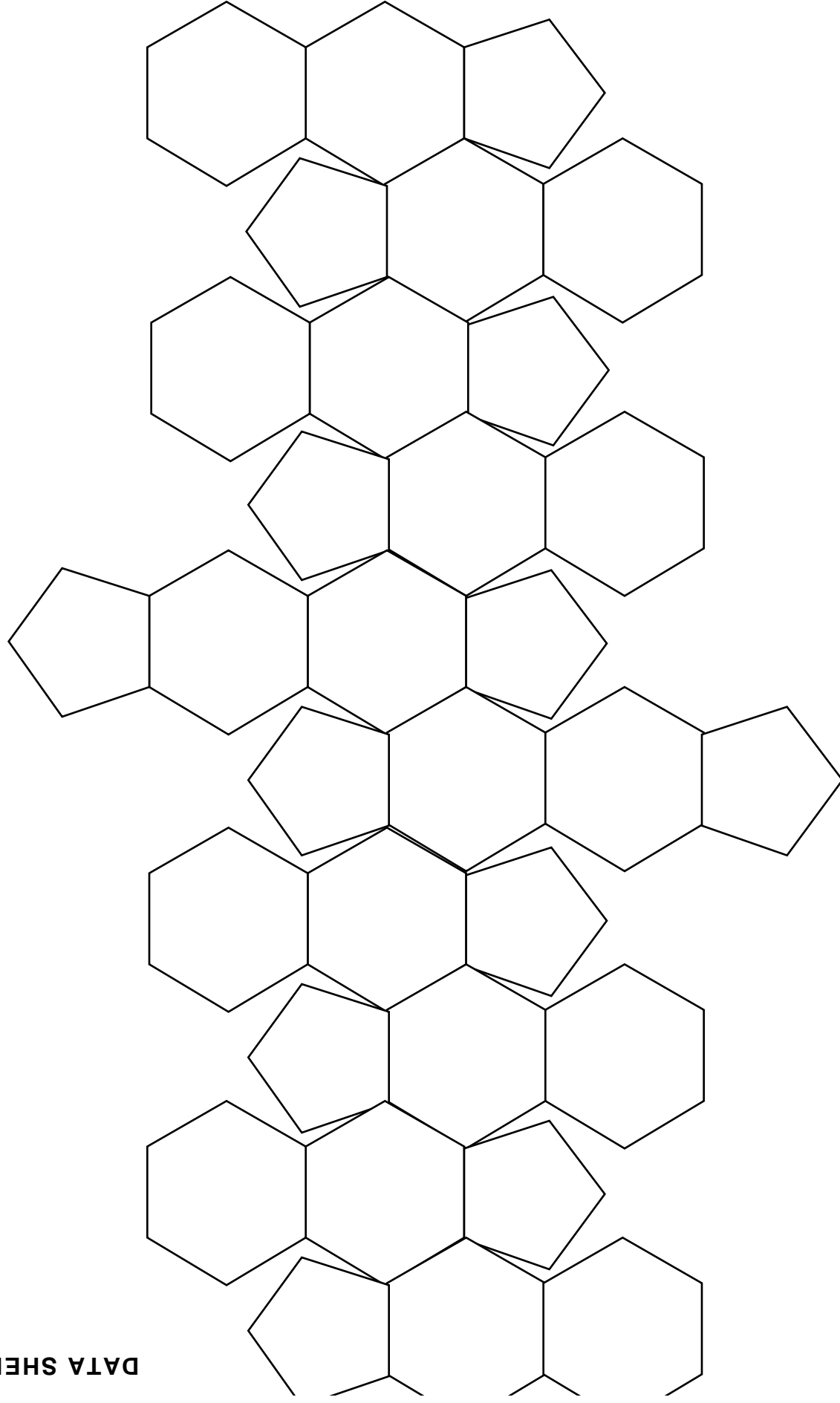Archdiocese of Baltimore

# SOCCER BALL ' NET '
## Truncated Icosahedron

# Area of Soccer Ball Calculation Worksheet

1.  Computing the Surface Area of a Sphere using the provided formulas.

Circumference = 2 r or  d                Area of a Circle =  r$^2$

Step 1:  Using the materials provided, find the circumference of the small ball.
Circumference = _____.

Step 2:  Take the chalk and  trace the circumference of the small ball.

Step 3:  Using the scissors, cut the small ball in half along the chalk line.

Step 4:  Measure the diameter of the cut edge of the ball.
What is the diameter? _____.
What is the radius? _____.
What geometric shape did you just measure? _____.

Step 5:  A circle on a flat sheet of paper, is how many dimensions? _____.
A sphere is how many dimensions? _____.

Step 6:  Mathematicians have found the surface area of a sphere is equal  to the area of four (4) circles. Therefore,  the surface area of a sphere would be?_____.

Step 7:  Using what you have just learned, can you determine the circumference of a soccer ball?_____.
Circumference = _____

Step 8:   Now that you have found  the circumference of the soccer ball, calculate the radius.
Radius = _____

Step 9:   Using the above information,  what is the surface area of a soccer ball?
Surface area =_____
(Hint : Use the formula from Step 6.)

## Comparison Worksheet

Step 1: What is the surface area of the soccer ball that you calculated on
worksheet 1?_____

Step 2: How many geometric shapes make up the surface of the soccer ball?
_____

Step 3: What are these shapes? _____.

Step 4: How many of each shape in Step 3 are there?_____.

Step 5: Using Data Sheet 3, divide one of each type of polygon into triangles.

Step 6: Using the triangle area formula (Area= 1/2 base X height), determine
the area of each triangle.

Step 7: Add the results for each polygon.
Hexagons : _____ + _____ + _____ + _____=_____.
Pentagons : _____ + _____ + _____ =_____.

Step 8: Multiply the area of the hexagon by the total number of hexagons.
_____ X_____= _____ in$^2$.

Step 9: Multiply the area of the pentagon by the total number of pentagons.
_____ X_____= _____ in$^2$.

Step 10: Add the total area of the hexagons and the pentagons.
Total Area = _____.

Step 11: Is this area the same as the surface area from step 1?_____
If they are different, can you explain why?_____
_____
If they are the same, can you explain why?_____
_____

**Scoring Key**

Score student  worksheet using the following key:

|       |                                          |
|-------|------------------------------------------|
| 5 pts | Meets all of the following criteria.     |
| 4 pts | Meets four of the following criteria.    |
| 3 pts | Meets three of the following criteria.   |
| 2 pts | Meets  two of the following criteria.    |
| 1 pts | Meets one of the following criteria.     |
| 0 pts | Meets none of the criteria.              |

Criteria for grading:
Completed the entire sheet and did all the required work.

Completed  3/4 of the worksheet and did all the required work.

Completed 1/2 of the worksheet and did all of the work for the portion completed.

Completed 1/4 of the worksheet and did all of the work for the portion completed.

Completed one or two questions and very little calculations.

Completed nothing on the worksheet.

# World Cup Soccer 1998

The World Cup Soccer meet is held every four years in a different country. The meet consists of 32 teams which are divided into 8 groups. Each team plays three other teams in its group in the first round. In 1999, the 3rd Women's World Cup kick-off will begin next summer. Seven U.S. cities will host games including : Los Angeles, California; Chicago, Illinois; Washington, D.C.; and Portland, Oregon.

## World Cup Soccer Teams

| Group A | Group B | Group C | Group D |
|---|---|---|---|
| Brazil | Austria | Denmark | Bulgaria |
| Morocco | Cameroon | France | Nigeria |
| Norway | Chile | Saudi Arabia | Paraguay |
| Scotland | Italy | South Africa | Spain |

| Group E | Group F | Group G | Group H |
|---|---|---|---|
| Belgium | Germany | Colombia | Argentina |
| Mexico | Iran | England | Croatia |
| Netherlands | United States | Romania | Jamaica |
| Korea Republic | Yugoslavia | Tunisia | Japan |

# World Cup Soccer Standing (1st round)

You are the official to determine which teams will go from Round 1 to Round 2 in the Soccer World Cup.  You must complete the following tasks:

Step 1:  Calculate the total points for teams listed in Groups A - H, (Data Sheet 1).

Step 2:  3 points are awarded for each win, and 1 point for each tie.  The two top teams in each group will advance to the 2nd Round.

# First Round Standings (Activity 2 Worksheet 2)

## Group A

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| Brazil | 2 | 0 | 0 | 5 | 1 |  |
| Norway | 0 | 0 | 2 | 3 | 3 |  |
| Morocco | 0 | 1 | 1 | 2 | 5 |  |
| Scotland | 0 | 1 | 1 | 2 | 3 |  |

## Group B

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| Italy | 1 | 0 | 1 | 5 | 2 |  |
| Chile | 0 | 0 | 2 | 3 | 3 |  |
| Austria | 0 | 0 | 2 | 2 | 2 |  |
| Cameroon | 0 | 1 | 1 | 1 | 4 |  |

## Group C

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| France | 2 | 0 | 0 | 7 | 0 |  |
| Denmark | 1 | 0 | 1 | 2 | 1 |  |
| South Africa | 0 | 1 | 1 | 1 | 4 |  |
| Saudi Arabia | 0 | 2 | 0 | 0 | 5 |  |

## Group D

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| Nigeria | 2 | 0 | 0 | 4 | 2 |  |
| Paraguay | 0 | 0 | 2 | 0 | 0 |  |
| Spain | 0 | 1 | 1 | 2 | 3 |  |
| Bulgaria | 0 | 1 | 1 | 0 | 1 |  |

# First Round Standings (Activity 2 Worksheet 2)

## Group E

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| Netherlands | 1 | 0 | 1 | 5 | 0 |  |
| Mexico | 1 | 0 | 1 | 5 | 3 |  |
| Belgium | 0 | 0 | 2 | 2 | 2 |  |
| South Korea | 0 | 2 | 0 | 1 | 8 |  |

## Group F

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| Germany | 1 | 0 | 1 | 4 | 2 |  |
| Yugoslavia | 1 | 0 | 1 | 3 | 2 |  |
| Iran | 1 | 1 | 0 | 2 | 2 |  |
| United States | 0 | 2 | 0 | 1 | 4 |  |

## Group G

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| England | 1 | 0 | 0 | 2 | 0 |  |
| Romania | 1 | 0 | 0 | 1 | 0 |  |
| Columbia | 0 | 1 | 0 | 0 | 1 |  |
| Tunisia | 0 | 1 | 0 | 0 | 2 |  |

## Group H

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| Argentina | 2 | 0 | 0 | 6 | 0 |  |
| Croatia | 2 | 0 | 0 | 4 | 1 |  |
| Japan | 0 | 2 | 0 | 2 | 2 |  |
| Jamaica | 0 | 2 | 0 | 1 | 8 |  |

# First Round Standings (Activity 2 Worksheet 2) Answer Key

## Group A

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| Brazil | 2 | 0 | 0 | 5 | 1 | 6 |
| Norway | 0 | 0 | 2 | 3 | 3 | 2 |
| Morocco | 0 | 1 | 1 | 2 | 5 | 1 |
| Scotland | 0 | 1 | 1 | 2 | 3 | 1 |

## Group B

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| Italy | 1 | 0 | 1 | 5 | 2 | 4 |
| Chile | 0 | 0 | 2 | 3 | 3 | 2 |
| Austria | 0 | 0 | 2 | 2 | 2 | 2 |
| Cameroon | 0 | 1 | 1 | 1 | 4 | 1 |

## Group C

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| France | 2 | 0 | 0 | 7 | 0 | 6 |
| Denmark | 1 | 0 | 1 | 2 | 1 | 4 |
| South Africa | 0 | 1 | 1 | 1 | 4 | 1 |
| Saudi Arabia | 0 | 2 | 0 | 0 | 5 | 0 |

## Group D

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| Nigeria | 2 | 0 | 0 | 4 | 2 | 6 |
| Paraguay | 0 | 0 | 2 | 0 | 0 | 2 |
| Spain | 0 | 1 | 1 | 2 | 3 | 1 |
| Bulgaria | 0 | 1 | 1 | 0 | 1 | 1 |

# First Round Standings (Activity 2 Worksheet 2) Answer Key

## Group E

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| Netherlands | 1 | 0 | 1 | 5 | 0 | 4 |
| Mexico | 1 | 0 | 1 | 5 | 3 | 4 |
| Belgium | 0 | 0 | 2 | 2 | 2 | 2 |
| South Korea | 0 | 2 | 0 | 1 | 8 | 0 |

## Group F

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| Germany | 1 | 0 | 1 | 4 | 2 | 4 |
| Yugoslavia | 1 | 0 | 1 | 3 | 2 | 4 |
| Iran | 1 | 1 | 0 | 2 | 2 | 3 |
| United States | 0 | 2 | 0 | 1 | 4 | 0 |

## Group G

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| England | 1 | 0 | 0 | 2 | 0 | 3 |
| Romania | 1 | 0 | 0 | 1 | 0 | 3 |
| Columbia | 0 | 1 | 0 | 0 | 1 | 0 |
| Tunisia | 0 | 1 | 0 | 0 | 2 | 0 |

## Group H

|  | W | L | T | GF | GA | PTS |
|---|---|---|---|---|---|---|
| Argentina | 2 | 0 | 0 | 6 | 0 | 6 |
| Croatia | 2 | 0 | 0 | 4 | 1 | 6 |
| Japan | 0 | 2 | 0 | 2 | 2 | 0 |
| Jamaica | 0 | 2 | 0 | 1 | 8 | 0 |

**Scoring Rubric**

**THE ONLY GAME IN TOWN**
**(Activity 2 worksheet 2)**

4  -  **Correct calculations for 7 - 8 groups**

3  -  **Correct calculations for 4 - 6 groups**

2  -  **Correct calculations for 2 - 3 groups**

1  -  **Correct calculations for 1 group**

0  -  **No correct calculations**

Pick one group and determine the group's playing pattern.

You are in charge of hiring referees for each game.  How many referees would need to be hired if each group of 4 plays each other once?  Explain your answer in 1 - 2 paragraphs.

## Activity 3
Be sure to read all instructions and the grading criteria before starting the activity.

1.  Select  <u>one group of four countries</u> from Data Sheet 2.  Using an almanac, atlas, the encyclopedia, or the computer, research the flags of these four countries.  Write a brief (1-2 sentence) description of each flag.
Now compare and contrast the four flags using their geometric patterns and make-up.  Make a list of all patterns you observe.
2.  Measure the flags you have selected to the nearest 1/4 in.  State the ratio of the length to the width.  Now compare these with the official ratios, Data Sheet 3, posted in the classroom.  In complete sentences, state your conclusions about the accuracy of the pictured flags.
3.  Select  <u>one</u> of your original flags.  Using the official ratio,  Data Sheet 3, set up a proportion to calculate the length and width of an official flag which you can make using the paper you have been given.  Now make this flag.  Be sure that <u>all</u> sections and decorations on the flag are to the correct scale.

## <u>Scoring</u>
 4 points -  Worked well in group
            Data is complete for all sections
            Data is well-organized for all data
            Measurements accurate within 1/4 inch
            Computations correct
            Written work complete and grammatically correct.
            Flag completed correctly
 3 points -  Worked well in group
             Data is mostly complete
             Data is organized
             Measurements within 1/2 inch
             Computations correct
             Written work complete
             Flag completed
 2 points -   Worked satisfactorily in group
              Data mostly complete
              Data not organized
              Measurements within 1/2 inch
              Computational errors
              Written work incomplete; Flag completed
 1 point -      Had difficulty working in group
              Data not complete
              Data not organized
              Measurements not within 1/2 inch
              Computational errors
              Written work incomplete; Flag incomplete
 0  points -   No response

# Data Sheet 3 (Activity 3)

Below are the official ratios of height to length for the national flags of 32 countries competing in the 1998 World Cup. [http://www.flags.ndirect.co.uk]

| | |
|---|---|
| Argentina | 1:2 |
| Austria | 2:3 |
| Belgium | 13:15 |
| Brazil | 7:10 |
| Bulgaria | 2:3 |
| Cameron | 2:3 |
| Chile | 2:3 |
| Columbia | 2:3 |
| Croatia | 1:2 |
| Denmark | 2:3 |
| England | 3:5 |
| France | 2:3 |
| Germany | 3:5 |
| Iran | 4:7 |
| Italy | 2:3 |
| Jamaica | 1:2 |
| Japan | 7:10 |
| Korea Republic | 2:3 |
| Mexico | 4:7 |
| Morocco | 2:3 |
| Netherlands | 2:3 |
| Nigeria | 1:2 |
| Norway | 8:11 |
| Paraguay | 2:3 |
| Romania | 2:3 |
| Saudi Arabia | 2:3 |
| Scotland | 2:3 |
| South Africa | 2:3 |
| Spain | 2:3 |
| Tunisia | 2:3 |
| United States | 10:19 |
| Yugoslavia | 1:2 |

Activity 4

# Players from which continent scored the most goals in World Cup 1998?

<u>Statement of Problem</u>

This is an investigation to determine whether the number of goals scored by players from each continent represented in the World Cup Soccer Tournament, can be predicted by the number of countries representing each continent.

<u>Procedure</u>

• Using Data Sheet #2 (the list of thirty-two countries participating in World Cup 1998), sort the countries by continent, writing the appropriate names in the correct column. Then tally the total countries representing each continent on Worksheet #1.

• Your teacher will now supply the total goals scored by players from a particular continent. Use proportions to calculate the predicted goals scored for the remaining four continents. Plot your results on the bar graph provided on Worksheet #2.

• Using Data Sheet #4, (containing each country's individual player's goals scored total), sort and tally the actual goals scored for each of the four continents that you made predictions. In a different color than the predicted goals, plot the actual goals scored on the bar graph on Worksheet #2, Activity 4.

• Transfer the actual goals scored and the predicted goals scored to the appropriate spaces on Worksheet #3. Follow the worksheet directions to calculate the percent error of your predictions.

• Write a paragraph to explain the data that you plotted on the double bar graph (predicted and actual). If there is a difference between the actual goals and your predictions, indicate the error difference and explain why this difference exists.

# Frequency Distribution Worksheet

1. Number of participating countries sorted by continent.

| Africa | Asia | Europe | North America | South America |
|--------|------|--------|---------------|---------------|
|        |      |        |               |               |

Totals:_____  _____  _____  _____  _____

2. Number of goals scored sorted by continent.

| Africa | Asia | Europe | North America | South America |
|--------|------|--------|---------------|---------------|
|        |      |        |               |               |

Totals:_____  _____  _____  _____  _____

# Comparison of Number of Goals to Number of Countries

NUMBER OF GOALS

50

45

40

35

30

25

20

15

10

5

0

| Africa | Asia | Europe | North America | South America |

## CONTINENTS
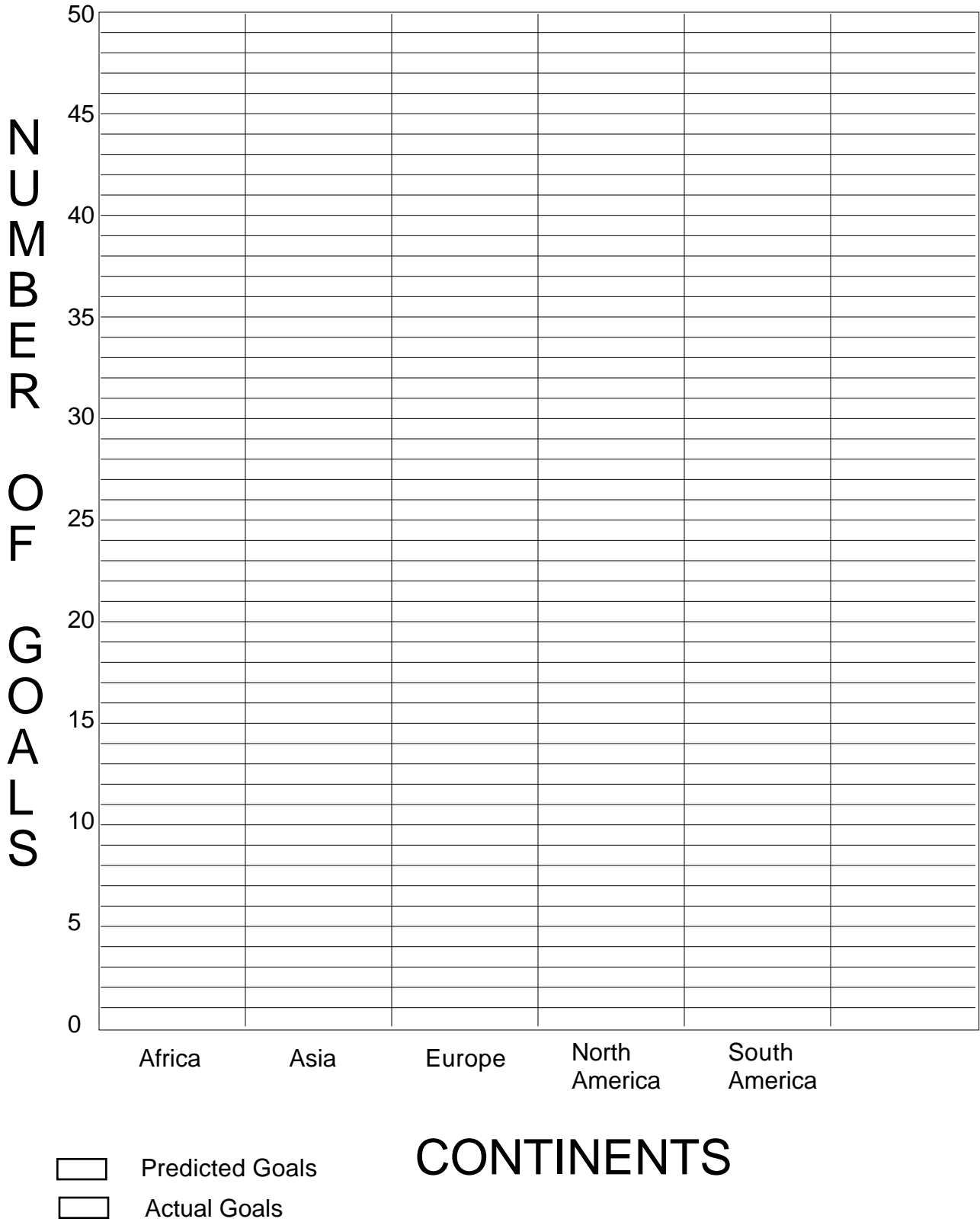
☐ Predicted Goals

☐ Actual Goals

# Percent Error Calculation Worksheet

## 1. **Africa**

Actual Goals Scored: _____.        Predicted Goals Scored: _____.
Difference between Actual Goals and Predicted Goals: _____.
Difference divided by Predicted goals: _____ X 100 = _____ % Error.

## 2. **Asia**

Actual Goals Scored: _____.        Predicted Goals Scored: _____.
Difference between Actual Goals and Predicted Goals: _____.
Difference divided by Predicted goals: _____ X 100 = _____ % Error.

## 3. **Europe**

Actual Goals Scored: _____.        Predicted Goals Scored: _____.
Difference between Actual Goals and Predicted Goals: _____.
Difference divided by Predicted goals: _____ X 100 = _____ % Error.

## 4. **North America**

Actual Goals Scored: _____.        Predicted Goals Scored: _____.
Difference between Actual Goals and Predicted Goals: _____.
Difference divided by Predicted goals: _____ X 100 = _____ % Error.

## 5. **South America**

Actual Goals Scored: _____.        Predicted Goals Scored: _____.
Difference between Actual Goals and Predicted Goals: _____.
Difference divided by Predicted goals: _____ X 100 = _____ % Error.

Activity 4, Assessment

## **Worksheet #1**

Section 1 and Section 2
- 3 points: All columns completed, countries/goals located correctly, results tabulated accurately
- 2 points: Most columns completed, countries located correctly, results tabulated accurately
- 1 point:  Worksheet started but incomplete and/or mostly inaccurate

## **Worksheet #2**

Double bar graph
- 3 points: Predicted and actual goals plotted correctly (matches worksheet 1), key is completed in different colors
- 2 points: Majority of predicted and actual goals plotted correctly (matches worksheet 1), key is completed in different colors
- 1 point:  Graph started but incomplete and/or mostly inaccurate

## **Worksheet #3**

Error percent
- 3 points: Predicted and actual goals transferred accurately from worksheet 1, difference between actual and predicted goals accurately calculated, correct division and calculation of percent error
- 2 points: Majority of predicted and actual goals transferred accurately from worksheet 1, difference between actual and predicted goals
- 1 point:  Worksheet started but incomplete and/or mostly inaccurate

## **Writing Activity**

Summation Paragraph
- 3 points: Correct punctuation, spelling , grammar; topic sentence explaining clear purpose of graph, error differences indicated, reasonable mathematical explanation for error percent difference
- 2 points: Majority of paragraph uses correct punctuation, spelling , grammar; has a topic sentence explaining the purpose of graph but not logical or clearly stated, some error differences indicated, some mathematical explanation for error percent difference offered
- 1 point:  Paragraph is grammatically incorrect, no clear relevant purpose of the bar graph is offered, no reasonable explanation for error percent difference is offered

# Activity 5
## WRITTEN COMPONENT

Students should have completed one or more of the previous activities.  However, they should have been given the assignment and the rubric at the beginning of the unit. This may be given as either a class or homework assignment.  If a computer lab is available, students should be encouraged to use the word processing program.

## WRITING ASSIGNMENT

After you have completed the class assignments in this unit, you will be required to do a writing assignment. This should be a one page, typed, double-spaced (150-200 words) article.  It must have a topic sentence, a headline (title) and include information you have covered in the units.

You have been selected to write an article for your school newspaper on the 1998 World Cup Games and soccer.  Using the topics studied in this unit, write an article which will be of interest to your fellow students.

## Scoring

4 points - Within length limits
        No grammar, spelling, punctuation errors
        Included at least 8 points relating to worksheets
        Used many descriptive words
        Developed topic
        Catchy headline

3 points - Within length limits
        No more than 3 grammar, spelling, punctuation errors
        Included at least 5 points relating to worksheets
        Used some descriptive words
        Developed topic
        Headline

2 points - Outside length limits
        More than 3 grammar, spelling, punctuation errors
        Included at least 3 points related to worksheets
        No descriptive words
        Did not develop topic
        Headline

1 point  - Outside length limits
        Many grammar, spelling, punctuation errors
        No descriptive words
        Did not develop topic
        No headline

0 points - No response

| Player | Country/Player # | Goals | Assists |
|--------|------------------|-------|---------|
| Suker, Davor | HRV, 9 | 6 | 0 |
| Batistuta, Gabriel | ARG, 9 | 5 | 0 |
| Vieri, Christian | ITA, 21 | 5 | 0 |
| Ronaldo | BRA, 9 | 4 | 3 |
| Hernandez, Luis | MEX, 15 | 4 | 0 |
| Salas, Marcelo | CHI, 11 | 4 | 0 |
| Rivaldo | BRA, 10 | 4 | 2 |
| Bergkamp, Dennis | HOL, 8 | 3 | 3 |
| Bebeto | BRA, 20 | 3 | 2 |
| Bierhoff, Oliver | GER, 20 | 3 | 2 |
| Klinsmann, Jurgen | GER, 18 | 3 | 1 |
| Cesar, Sampaio | BRA, 5 | 3 | 0 |
| Henry, Thierry | FRA, 12 | 3 | 0 |
| Hierro, Fernando | ESP, 6 | 2 | 3 |
| Laudrup, Brian | DEN, 11 | 2 | 3 |
| Baggio, Roberto | ITA, 18 | 2 | 2 |
| Ortega, Ariel | ARG, 10 | 2 | 2 |
| Thuram, Lilan | FRA, 15 | 2 | 2 |
| Bartlett, Shaun | RSA, 9 | 2 | 1 |
| Cocu, Philip | HOL, 11 | 2 | 1 |
| De Boer, Ronald | HOL, 7 | 2 | 1 |
| Pelaez, Ricardo | MEX, 9 | 2 | 1 |
| Petit, Emmanuel | FRA, 17 | 2 | 1 |
| Shearer, Alan | ENG, 9 | 2 | 1 |
| Zidane, Zidane | ENG, 9 | 2 | 1 |
| Bassir, Salaheddine | MOR, 14 | 2 | 0 |
| Hadda, Abdeljilil | MOR, 9 | 2 | 0 |
| Kiko | ESP, 19 | 2 | 0 |
| kluivert | HOL, 9 | 2 | 0 |
| Komljenovic, Slobodan | YUG, 13 | 2 | 0 |
| Moldovan, Viorel | ROM, 9 | 2 | 0 |
| Morientes, Fernando | ESP, 7 | 2 | 0 |
| Owen, Michael | ENG, 20 | 2 | 0 |
| Prosinecki, Robert | HRV, 8 | 2 | 0 |
| Whitmore, Theodore | JAM, 11 | 2 | 0 |
| Wilmots, Marc | BEL, 7 | 2 | 0 |
| Blanco, Cuauhtemoc | MEX, 11 | 1 | 3 |
| Djorkaeff, Youry | FRA, 6 | 1 | 3 |
| Laudrup, Michael | DEN, 10 | 1 | 2 |
| Adepoju, Mutiu | NGA, 8 | 1 | 1 |
| Babangida, Tijani | NGA, 13 | 1 | 1 |
| Di Biagio, Luigi | ITA, 14 | 1 | 1 |
| El Hadji, Moustafa | MOR, 7 | 1 | 1 |
| Ha, Seok Ju | KOR, 17 | 1 | 1 |
| Ilie, Adrian | ROM, 11 | 1 | 1 |
| Jarnie, Robert | HRV, 17 | 1 | 1 |
| Lawal, Garba | NGA, 11 | 1 | 1 |
| Lizarazu, Bixente | FRA, 3 | 1 | 1 |

Data Sheet 4:  World Cup 1998 Individual Player Statistics

| | | | |
|---|---|---|---|
| Luis, Enrique | ESP, 21 | 1 | 1 |
| Mihajlovic, Sinisa | YUG, 11 | 1 | 1 |
| Moller, Peter | DEN, 18 | 1 | 1 |
| Overmars, Marc | HOL, 14 | 1 | 1 |
| Raul | ESP, 10 | 1 | 1 |
| Sand, Ebbe | DEN, 19 | 1 | 1 |
| Stanic, Mario | HRV, 13 | 1 | 1 |
| Stojkovic, Dragan | YUG, 10 | 1 | 1 |
| Trezeguet, David | FRA, 20 | 1 | 1 |
| Al Jabar, Sami | KSA, 9 | 1 | 0 |
| Al Tunian, Youssef | KSA, 15 | 1 | 0 |
| Anderton, Darren | ENG, 14 | 1 | 0 |
| Ayala, Celso | PAR, 5 | 1 | 0 |
| Beckham, David | ENG, 7 | 1 | 0 |
| Benitez, Miguel | PAR, 15 | 1 | 0 |
| Blanc, Laurent | FRA, 5 | 1 | 0 |
| Burley, Craig | SCO, 8 | 1 | 0 |
| Cardozo, Jose | PAR, 9 | 1 | 0 |
| Collins, John | SCO, 11 | 1 | 0 |
| Davids, Edgar | HOL, 16 | 1 | 0 |
| Dugarry, Christophe | FRA, 21 | 1 | 0 |
| Earle, Robert | JAM, 16 | 1 | 0 |
| Eggen, Dan | NOR, 15 | 1 | 0 |
| Estili, Hamid | IRN, 9 | 1 | 0 |
| Flo, Havard | NOR, 17 | 1 | 0 |
| Flo, Tore Andre | NOR, 9 | 1 | 0 |
| Garcia Aspe, Alberto | MEX, 8 | 1 | 0 |
| Helveg, Thomas | DEN, 6 | 1 | 0 |
| Herzog, Andreas | AUT, 10 | 1 | 0 |
| Ikpeba, Victor | NGA, 20 | 1 | 0 |
| Jorgensen, Lars | DEN, 21 | 1 | 0 |
| Kostadinov, Emil | BGR, 7 | 1 | 0 |
| Lopez, Claudio | ARG, 7 | 1 | 0 |
| Mahdavi Kia, Medi | IRN, 2 | 1 | 0 |
| Mboma, Patrick | CMR, 10 | 1 | 0 |
| McBride, Brian | USA, 20 | 1 | 0 |
| McCarthy, Benedict | RSA, 17 | 1 | 0 |
| Mijatovic, Pedrag | YUG, 9 | 1 | 0 |
| Moller, Andreas | GER, 7 | 1 | 0 |
| Nakayama, Masahi | JPN, 9 | 1 | 0 |
| Nielsen, Allan | DEN, 7 | 1 | 0 |
| Nilis, Luc | BEL, 10 | 1 | 0 |
| Njanka, Pierre | CMR, 6 | 1 | 0 |
| Oliseh, Sunday | NGA, 15 | 1 | 0 |
| Oruma, Wilson | NGA, 18 | 1 | 0 |
| Petrescu, Dan | ROM, 2 | 1 | 0 |
| Pineda, Hector | ARG, 4 | 1 | 0 |
| Polster, Anton | AUT, 19 | 1 | 0 |
| Preciado, Leider | COL, 21 | 1 | 0 |
| Rekdal, Kjetil | NOR, 10 | 1 | 0 |
| Rieper, Marc | DEN, 3 | 1 | 0 |

| | | | |
|---|---|---|---|
| Scholes, Paul | ENG, 16 | 1 | O |
| Sierra, Jose | CHI, 10 | 1 | O |
| Souayah, Skander | TUN, 15 | 1 | O |
| Van Hooijdonk, Pierre | HOL, 17 | 1 | O |
| Vastic, Ivica | AUT, 9 | 1 | O |
| Vlaovic, Goran | HRV, 19 | 1 | O |
| Yoo, Sang Chul | KOR, 6 | 1 | O |
| Zanetti, Javier | ARG, 22 | 1 | O |

# Frequency Distribution Worksheet
## (Answer Sheet)

1.  Number of participating countries sorted by continent.

| Africa | Asia | Europe | North America | South America |
|---|---|---|---|---|
| Morocco<br>Cameron<br>S. Africa<br>Nigeria<br>Tunisia | Saudi Arabia<br>Korea<br>Japan<br>Iran | Norway    Belgium<br>Scotland   Holland<br>Austria    Germany<br>Italy      Yugoslavia<br>Denmark   England<br>France     Romania<br>Bulgaria    Hungary<br>Spain | Mexico<br>U.S.<br>Jamaica | Brazil<br>Chile<br>Paraguay<br>Columbia<br>Argentina |

Totals:    __5__          __4__          __15__          __3__          __5__

2.  Number of goals scored sorted by continent.

| Africa | Asia | Europe | North America | South America |
|---|---|---|---|---|
| MOR (5)<br>CMR (2)<br>RSA (3)<br>NGR (6)<br>TUN (1) | KSA  (2)<br>KOR (2)<br>JPN (1)<br>IRN (2) | NOR (4)    BEL (3)<br>SCO (2)    HOL (12)<br>AUT (3)    GER (7)<br>ITA  (8)    YUG (5)<br>DEN  (9)    ENG (9)<br>FRA (12)    ROM (4)<br>BGR (1)    HRU (11)<br>ESP (8) | MEX (8)<br>USA (1)<br>JAM (3) | BRA (14)<br>CHI (5)<br>PAR (3)<br>COL (1)<br>ARG (10) |

Totals:    __17__          __7__          __98__          __12__          __33__